Abstract

The invention relates to an ultrasonic flow sensor, particularly for measuring a volume flow or mass flow of a fluid (1), which includes two ultrasonic converters (A,B) that are offset in the direction of flow (2) and each transmit a periodic ultrasonic signal (S1,S2) to the other ultrasonic converter (B,A), and a control and evaluation unit (4) that detects several reception times (t_i',t_i") per ultrasonic signal (S1,S2) when an ultrasonic signal (S1,S2) is received by an ultrasonic converter (B,A), a measured quantity (S) being determined from one of the reception times (t_i',t_i"). The accuracy of the measurement can be improved substantially when the control and evaluation unit (4) includes at least two counters (5a,5b), the first counter counting a period (Δt') from a first switchover/reception time (t_1') of a signal (S2,P) at least until the first reception time (t_1") of the ultrasonic signal (S1), and the second counter determining the time interval (Δt") between a first instant and a second instant out of several paired instants (t_i',t_i") of the signals (S1,S2,P).

Figure 6